IDENTIFICATION OF THE PLANTS ILLUSTRATED AND DESCRIBED IN CATESBY'S NATURAL HISTORY OF THE CAROLINAS, FLORIDA AND THE BAHAMAS

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Perhaps it will surprise some that after nearly 250 years botanists are still unable to identify several of the plants described and illustrated by Catesby (1730 – 1747) concerning a flora that surely must rank among the best known in this hemisphere. In addition a considerable number of Catesby's plants can be identified only approximately or that, at the very least, legitimate cause exists for debate over their identities. I believe that the explanation of this unsatisfactory state is that Catesby's illustrations are very much lacking in those features that botanists depend upon in order to identify plants and that Catesby's abilities verbally to describe the plants were if anything even less developed than his talents as a biological draftsman. Each group of biologists, after noting the unsatisfactory rendition of the organisms in groups in which they are most expert, usually then indicates that Catesby's greatest talents were in a group other than that which the investigator was most familiar. My conclusion is that the overall evaluation of Catesby's biological depiction is not high as the details and even major features are often either not shown or are poorly depicted. The lack of detail and crudity in representation is indeed unfortunate since for many plants and animals Catesby was either the only one or a prime reference in those Linnaean publications that became the starting points in biological nomenclature. Ewan (1976, p. 89) noted that Linnaeus cited Catesby's work ninety-five times in *Species plantarum* (1753), the starting point for most botanical nomenclature, and Linnaeus in later works or other authors later added to this number in the publication of additional new species based on Catesby's Natural History. Howard and Staples (1983, p. 511) in their paper dealing only with plants concluded that "Catesby's plates appear to be the types of twenty-five recognized taxa, of which twenty-one were described by Linnaeus and four by subsequent authors." These plates were also found by them to be "the types of an additional twelve synonymous names." Clearly then the significance of Catesby's work, artistically crude and almost completely devoid of significant botanical detail though

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the plates may be, is undeniably great since these plates are in some cases considered to be the types upon which a given binomial rests.

More than three decades ago I began this study of the identities of the plants included in Catesby's Natural History of the Carolinas. I soon encountered obstacles that prevented me from completing the investigation in a timely manner. As might be expected some of the obstacles have in time been either directly solved by the publications of others or their work has enabled me to make progress when before I could not. Some of the obstacles that could not then be overcome by me have been solved by my increasing experience that time and greater familiarity with the plants in the field and the literature about them provides. To my chagrin Howard and Staples (1983) published a commentary on Catesby's *Natural History* that largely fulfilled what I had only partly completed two decades before. They pointed out a prior and similar study to their own published by Ewan (1976) of which I was completely unaware. Since some of my conclusions differed significantly from either one or both of these two most recent studies, it seemed worthwhile to place on record my conclusions along with the reasons for my differences. The nature of such a study makes it certain that we can only hope to approach perfection incrementally. Hopefully the future will judge that some progress in interpreting the identities of Catesby's plants was made in this account. I would be remiss not to acknowledge the assistance and stimulation I obviously received from both Ewan's and Howard and Staples' earlier commentaries.

For those interested in learning about the life and accomplishments of Mark Catesby (1682 – 1749), the best source is Frick and Stearns (1961) "Mark Catesby, the Colonial Audubon."

Some might consider that my criticism of the botanical draftsmanship and phytographic skills of this early colonial naturalist is too harsh. After all the various commentators have managed to identify the vast majority of the organisms depicted of both plants and animals. Perhaps, as a counter balance, Frick's evaluation (1974) ought to be quoted: "The flaws of the natural History of Carolina are minor in comparison with its virtues . . . No other mainland area had so complete a natural history before the American Revolution as did South Carolina and eighteenth century Georgia, and certainly none so elegant. Mark Catesby's achievement was unique."

It might be meaningful to those who are very slightly statistically oriented to compare the differences between the three commentaries presented in the table. (I suggest though that these comparisons though are really not meaningfully subjected to statistical comparison, or, if so, not to the very unsophisticated comparisons made here where any change be it in authority or in spelling was tallied as a change equally important as a change in

identity.) Be that as it may be, between Ewan and Howard and Staples there is a 24.5% difference, between Ewan and Wilbur there was a 28.5% difference, and between Howard and Staples and Wilbur a 10.2% change.

The identifications of the plants in Catesby's Natural History made by me and the two most recent commentators are arranged in three parallel columns in the following comparative table. Where there are differences in identification, I have provided a brief explanation in the numbered footnotes referred to in the right-hand margin.

IDENTIFICATION OF CATESBY'S PLATES

Ewan (1974)	Howard and Staples (1983)	Wilbur (1990)
Vol. 1		
9. *Castanea pumila* (L.) Marsh.	9. *Castanea pumila* (L.) Miller	9. *Castanea pumila* (L.) P. Mill.
10. *Columbrina reclinata* (L'Her.) Brongn.	10. *Colubrina elliptica* (Sw.) Briz. & Stern	10. *Colubrina elliptica* (Sw.) Briz. & Stern *1
11. *Taxodium distichum* (L.) Rich.	11. *Taxodium distichum* (L.) Rich.	11. *Taxodium distichum* (L.) L.C. Rich.
13. *Myrica pennsylvanica* Loisel.	13. *Myrica pensylvanica* Loisel.	13. *Myrica heterophylla* Raf. *2
14. *Oryza sativa* L.	14. *Oryza sativa* L.	14. *Oryza sativa* L.
15. *Smilax laurifolia* L.	15. *Smilax laurifolia* L.	15. *Smilax laurifolia* L.
16. *Quercus phellos* L.	16. *Quercus phellos* L.	16. *Quercus phellos* L.
17. *Quercus virginiana* (L.) L. [sic!]	17. *Quercus virginiana* Miller	17. Quercus *virginiana* P. Mill.
18. *Quercus prinos* L. [sic!]	18. *Quercus prinus* L.	18. *Quercus michauxii* Nutt. *3
19. *Quercus marilandica* Muenchh.	19. *Quercus marilandica* Muenchh.	19. *Quercus marilandica* Muenchh.
20a. *Quercus nigra* L.	20a. *Quercus nigra* L.	20a. *Quercus nigra* L.
20b. *Mitchella repens* L.	20b. *Mitchella repens* L.	20b. *Mitchella repens* L.
21l. *Quercus alba* L. r. nor noted	21l. *Quercus alba* L. r.*Quercus rubra* L.	21l. *Quercus alba* L. r. *Quercus* sp. *4
22. *Quercus laevis* Walt.	22. *Quercus incana* Bartr.	22. *Quercus incana* Bartr. *5
23. *Quercus rubra* L.	23. *Quercus laevis* Walter	23. *Quercus laevis* Walt. *6
24. *Podophyllum peltatum* L.	24. *Podophyllum peltatum* L.	24. *Podophyllum peltatum* L.
25. *Chrysobalanus icaco* L.	25. *Chrysobalanus icaco* L.	25. *Chrysobalanus icaco* L.
26. *Zanthoxylum clava-herculis* L.	26. *Zanthoxylum clava-herculis* L.	26. *Zanthoxylum clava-herculis* L.
27. *Cornus florida* L. f. *rubra*	27. *Cornus florida* L. f. *rubra* (Weston) Schelle	27. *Cornus florida* L.
28. *Prunus virginiana* L.	28. *Prunus virginiana* L.	28. *Prunus serotina* Ehrh. *7
29. *Aristolochia serpentaria* L.	29. *Aristolochia serpentaria* L.	29. *Aristolochia serpentaria* L.
30. *Elaphrium simaruba* L.	30. *Bursera simaruba* (L.) Sarg.	30. *Bursera simaruba* (L.) Sarg. *8
31. *Ilex cassine* L.	31. *Ilex cassine* L.	31. *Ilex cassine* L.
32. *Uniola paniculata* L.	32. *Uniola paniculata* L.	32. *Uniola paniculata* L.
33. *Hypoxis hirsuta* (L.) Cov.	33. *Hypoxis* sp.	33. *Hypoxis* sp. *9
34. *Populus balsamifera* L.	34. *Populus heterophylla* L.	34. *Populus heterophylla* L. *10
35. *Ipomoea sagittata* Cav.	35. *Ipomoea sagittata* Poiret	35. *Ipomoea sagittata* Poir.
36. *Monotropa uniflora* L.	36. *Monotropa uniflora* L.	36. *Monotropa uniflora* L.
37. *Tabebuia bahamensis* (Northrop) Britt.	37. *Tabebuia bahamensis* (Northrop) Britt.	37. *Tabebuia bahamensis* (Northrop) Britt.
38a. *Carya tomentosa* (Poir.) Nutt. b. *Carya cordiformis* (Wang.) K. Koch	38a. *Carya alba* (L.) K. Koch b. *Carya cordiformis* (Wang.) K. Koch	38a. *Carya tomentosa* (Poir.) Nutt. *11 b. *Carya glabra* (P. Mill.) Sweet *12

(Identification of Catesby's plates continued)

39. *Magnolia virginiana* L.
40. *Metopium toxiferum* (L.) Krug & Urban
41. *Nyssa aquatica* L.
42. *Jacaranda caerulea* (L.) Griseb.
43. *Gleditsia aquatica* Marsh.
44. *Gordonia lasianthus* (L.) Ellis
45. *Trillium catesbaei* Ell.
46. *Calycanthus floridus* L.
47. *Smilax herbacea* L.
48. *Liriodendron tulipifera* L.
49. *Catalpa bignonioides* Walt.
50. *Trillium sessile* L.
51. *Menispermum canadense* L.
52. *Smilax bona-nox* L.
53. *Gelsemium sempervirens* (L.) Ait.
54. *Symplocos tinctoria* (L.) L'Her
55. *Sassafras albidum* (Nutt.) Nees
56. *Platanus occidentalis* L.
57. *Rhododendron viscosum* (L.) Torr.
58a. *Cleistes divaricata* (L.) Ames
b. *Echites umbellata* Jacq.
59. *Casasia clusiaefolia* (Jacq.) Urban
60. *Nyssa ogeche* Bartr.
61. *Osmanthus americanus* (L.) Benth. & Hook.
62. *Acer rubrum* L.
63. *Persea borbonia* (L.) Sprengel
64. *Halesia carolina* L.
65. *Campsis radicans* (L.) Seem.
66. *Clethra alnifolia* L.
67. *Juglans nigra* L.
68. *Chionanthus virginica* L.
69. *Myrica cerifera* L.
70. *Gentiana catesbaei* Walt.
71. *Oxydendrum arboreum* (L.) DC.
72. *Salmea petrochioides* Griseb. [sic!]
75. unidentified
77. *Phymosia abutiloides* (L.) Desv.
79. *Scaevola plumieri* (L.) Vahl
80. *Fraxinus americanus* L. [sic!]
82. *Orontium aquaticum* L.
83. *Peltandra sagittaefolia* (Michx.) Morong
85. *Avicennia nitida* Jacq.
86. unidentified

39. *Magnolia virginiana* L.
40. *Metopium toxiferum* (L.) Krug & Urban
41. *Nyssa sylvatica* Marsh.
42. *Jacaranda caerulea* (L.) Griseb.
43. *Gleditsia aquatica* Marsh.
44. *Gordonia lasianthus* (L.) Ellis
45. *Trillium catesbaei* Ell.
46. *Calycanthus floridus* L.
47. *Smilax pumila* Walter
48. *Liriodendron tulipifera* L.
49. *Catalpa bignonioides* Walter
50. *Trillium maculatum* Raf.
51. *Cocculus carolinus* (L.) DC.
52. *Smilax tamnoides* L.
53. *Gelsemium sempervirens* (L.) Aiton
54. *Symplocos tinctoria* (L.) L'Her.
55. *Sassafras albidum* (Nutt.) Nees var. *molle* (Raf.) Fern.
56. *Platanus occidentalis* L.
57. *Rhododendron viscosum* (L.) Torr. var. *aemulans* Rehder
58a. *Cleistes divaricata* (L.) Ames
b. *Echites umbellata* Jacq.
59. *Casasia clusiifolia* (Jacq.) Urban
60. *Nyssa aquatica* L.
61. *Osmanthus americanus* (L.) Gray
62. *Acer rubrum* L.
63. *Persea borbonia* (L.) Sprengel
64. *Halesia tetraptera* Ellis
65. *Campsis radicans* (L.) Seem.
66. *Clethra alnifolia* L.
67. *Juglans nigra* L.
68. *Chionanthus virginicus* L.
69. *Myrica cerifera* L.
70. *Gentiana catesbaei* Walter
71. *Oxydendrum arboreum* (L.) DC.
72. *Salmea petrohioides* Griseb.
75. *Reynosia septentrionalis* Urb.
77. *Phymosia abutiloides* (L.) Ham.
79. *Scaevola plumieri* (L.) Vahl
80. *Fraxinus americana* L.
82. *Orontium aquaticum* L.
83. *Peltandra virginica* (L.) Schott & Engler [sic!]
85. *Avicennia germinans* (L.) L.
86. *Laguncularia racemosa* (L.) Gaertn.

39. *Magnolia virginiana* L.
40. *Metopium toxiferum* (L.) Krug & Urb.
41. *Nyssa sylvatica* Marsh. •13
42. *Jacaranda caerulea* (L.) Griseb.
43. *Gleditsia aquatica* Marsh.
44. *Gordonia lasianthus* (L.) Ellis
45. *Trillium catesbaei* Ell.
46. *Calycanthus floridus* L.
47. *Smilax pumila* Walt. •14
48. *Liriodendron tulipifera* L.
49. *Catalpa bignonioides* Walt.
50. *Trillium maculatum* Raf. •15
51. *Cocculus carolinus* (L.) DC. •16
52. *Smilax* an unidentifiable mixture of 2–3 species •17
53. *Gelsemium sempervirens* (L.) J. St.-Hil. •18
54. *Symplocos tinctoria* (L.) L'Her.
55. *Sassafras albidum* (Nutt.) Nees
56. *Platanus occidentalis* L.
57. *Rhododendron viscosum* (L.) Torr.
58a. *Cleistes divaricata* (L.) Ames
b. *Echites umbellata* Jacq.
59. *Casasia clusiifolia* (Jacq.) Urb.
60. *Nyssa aquatica* L. •19
61. *Osmanthus americanus* (L.) Benth. & Hook.f.ex A. Gray
62. *Acer rubrum* L.
63. *Persea borbonia* (L.) Sprengel
64. *Halesia tetraptera* Ellis •20
65. *Campsis radicans* (L.) Seem.
66. *Clethra alnifolia* L.
67. *Juglans nigra* L.
68. *Chionanthus virginicus* L.
69. *Myrica cerifera* L.
70. *Gentiana catesbaei* Walt.
71. *Oxydendrum arboreum* (L.) DC.
72. *Salmea petrohioides* Griseb.
75. *Reynosia septentrionalis* Urb.
77. *Phymosia abutiloides* (L.) Desv. ex Ham.
79. *Scaevola plumieri* (L.) Vahl
80. *Fraxinus caroliniana* P. Mill. •21
82. *Orontium aquaticum* L.
83. *Peltandra virginica* (L.) Schott & Endl. •22
85. *Avicennia germinans* (L.) L. •23
86. *Laguncularia racemosa* (L.) Gaertn. •24

(Identification of Catesby's plates continued)

92. *Wedelia bahamensis* (Britt.) Schulz	92. *Wedelia bahamensis* (Britt.) Schulz	92. *Wedelia bahamensis* (Britt.) O.E. Schulz
93. *Borrichia arborescens* (L.) DC.	93. *Borrichia arborescens* (L.) DC.	93. *Borrichia arborescens* (L.) DC.
98. *Jacquinia keyensis* Mez	98. *Jacquinia keyensis* Mez	98. *Jacquinia keyensis* Mez
Vol. II		
24. *Ecastophyllum brownei* Pers.	24. *Dalbergia ecastophyllum* (L.) Taub.	24. *Dalbergia ecastophyllum* (L.) (L.) Taub. *25
26. *Xylophylla epiphyllanthus* (L.) Britt.	26. *Phyllanthus epiphyllanthus* L.	26. *Phyllanthus epiphyllanthus* L. *26
28a. *Ocotea coriacea* (Sw.) Britt. b. *Galactia rudolphioides* (Griseb.) Hook. & Arn.	28a. *Ocotea coriacea* (Sw.) Britt. b. *Galactia rudolphioides* (Griseb.) Benth. & Hook.	28r. *Ocotea coriacea* (Sw.) Britt. 1. *Galactia rudolphioides* (Griseb.) Benth & Hook.
30. *Samolus ebracteatus* H.B.K. (?)	30. Unidentified	30. Unidentified *27
32. *Picrodendron macrocarpum* (A. Rich.) Britt.	32. *Picrodendron baccatum* (L.) Krug & Urban	32. *Picrodendron baccatum* (L.) Krug & Urban *28
33a. *Conocarpus erecta* L. b. *Amyris elemifera* L.	33a. *Conocarpus erectus* L. b. *Amyris elemifera* L.	33a. *Conocarpus erectus* L. b. *Amyris elemifera* L.
38. *Thallasia testudinum* König	38. *Thalassia testudinum* König	38. *Thalassia testudinum* König
42l. *Leucaena glauca* (L.) Benth. r. *Banara reticulata* Griseb.	42l. *Lysiloma latisiliquum* (L.) Benth. r. *Banara minutiflora* (A. Rich.) Sleumer	42l. *Lysiloma latisiliquum* (L.) Benth. *29 r. *Banara minutiflora* (A. Rich.) Sleumer *38
43. *Leucothoë racemosa* Gray	43. *Leucothoë racemosa* (L.) Gray	43. *Leucothoë racemosa* (L.) A. Gray
44. Unidentified legume	44. *Acacia tortuosa* (L.) Willd.	44. *Acacia tortuosa* (L.) Willd.
45. *Colocasia esculenta* (L.) Schott	45. *Alocasia* sp. or *Xanthosoma* sp.	45. *Alocasia* or *Xanthosoma* *31
46. *Croton eluteria* (L.) Sw.	46. *Croton eluteria* (L.) Sw.	46. *Croton eleuteria* (L.) Sw.
47. *Callicarpa americana* L.	47. *Callicarpa americana* L.	47. *Callicarpa americana* L.
48. *Cissus tuberculata* Jacq.	48. *Cissus tuberculata* Jacq.	48. *Cissus tuberculata* Jacq.
49. *Erythrina herbacea* L.	49. *Erythrina herbacea* L.	49. *Erythrina herbacea* L.
50. *Canella winterana* (L.) Gaertn.	50. *Canella winterana* (L.) Gaertn.	50. *Canella winterana* (L.) Gaertn.
51a. *Caesalpinia bahamensis* Lam. b. *Passiflora pallida* L.	51a. *Caesalpinia bahamensis* Lam. b. *Passiflora suberosa* L.	51a. *Caesalpinia bahamensis* Lam. b. *Passiflora suberosa* L. *32
52. *Decumaria barbara* L.	52. Unidentified	52. Unidentified *33
53. *Urechites lutea* (L.) Britt.	53. *Urechites lutea* (L.) Britt.	53. *Urechites lutea* (L.) Britt.
54. *Silene virginica* L.	54. *Silene virginica* L.	54. *Silene virginica* L.
55. *Polystachya minuta* (Aubl.) Britt.	55. *Polystachya concreta* (Jacq.) Garay & Sweet	55. *Polystachya concreta* (Jacq.) Garay & Sweet *34
56. *Lilium michauxii* Poir.	56. *Lilium superbum* L.	56. *Lilium superbum* L. *35
57. *Ilex vomitoria* Ait.	57. *Ilex vomitoria* L. [sic!]	57. *Ilex vomitoria* Ait.
58. *Lilium catesbaei* Walt.	58. *Lilium catesbaei* Walt.	58. *Lilium catesbaei* Walt.
59. *Echinacea purpurea* (L.) Moench	59. *Echinacea purpurea* (L.) Moench	59. *Echinacea purpurea* (L.) Moench
60. *Ipomoea batatas* (L.) Lam.	60. *Ipomoea batatas* (L.) Lam.	60. *Ipomoea batatas* (L.) Lam.
61. *Magnolia grandiflora* L.	61. *Magnolia grandiflora* L.	61. *Magnolia grandiflora* L.
62. *Commelina virginica* L.	62. *Commelina virginica* L.	62. *Commelina erecta* L. *36
63. *Rhizophora mangle* L.	63. *Rhizophora mangle* L.	63. *Rhizophora mangle* L.
64. *Annona glabra* L.	64. *Annona glabra* L.	64. *Annona glabra* L.
65. *Liquidambar styraciflua* L.	65. *Liquidambar styraciflua* L.	65. *Liquidambar styraciflua* L.
66. *Haemotoxylum campechianum* L.	66. *Haematoxylon campechianum* L. [*Haematoxylum* is the original spelling.]	66. *Haematoxylum campechianum* L.

(Identification of Catesby's plates continued)

67. *Annona cherimola* Mill	67. *Annona glabra* L.	67. *Annona glabra* L. *37
68. *Epidendrum nocturnum* Jacq.	68. *Epidendrum nocturnum* Jacq.	68. *Epidendrum nocturnum* Jacq.
69l._____	69l._____	69l. *Sarracenia minor* Walt. *38
r. *Sarracenia flava* L.	r. *Sarracenia* × *catesbaei* (Ell.) Bell	r. *Sarracenia flava* L.
70. *Sarracenia purpurea* L.	70. *Sarracenia purpurea* L.	70. *Sarracenia purpurea* L.
71. *Symplocarpus foetidus* (L.) Nutt.	71. *Symplocarpus foetidus* (L.) Nutt.	71. *Symplocarpus foetidus* (L.) Nutt.
72. *Cypripedium calceolus* L.	72. *Cypripedium acaule* Aiton	72. *Cypripedium acaule* Ait. *39
73. *Cypripedium calceolus* var. *pubescens* (Willd.) Correll	73. *Cypripedium pubescens* Willd.	73. *Cypripedium pubescens* Willd.
74. *Epicladium boothianum* (Lindl.) Small	74. *Epidendrum boothianum* Lindley	74. *Encyclia boothianum* (Lindl.) Dressler *40
75. *Sideroxylon foetidissimum* Jacq.	75. *Mastichodendron foetidissimum* (Jacq.) Lam	75. *Mastichodendron foetidissimum* (Jacq.) Lam *41
76. *Diospyros virginina* L.	76. *Diospyros virginiana* L.	76. *Diospyros virginiana* L.
77. *Catopsis berteroniana* (Schultes) Mez	77. *Catopsis berteroniana* (Schultes) Mez	77. *Catopsis berteroniana* (J.A. & J.H. Schultes) Mez
78. *Spigelia marilandica* L.	78. *Spigelia marilandica* (L.) L.	78. *Spigelia marilandica* (L.) L.
79. *Bourreria ovata* Miers	79. *Bourreria ovata* Miers	79. *Bourreria ovata* Miers
80. *Magnolia macrophylla* Michx.	80. *Magnolia tripetala* (L.) L.	80. *Magnolia tripetala* (L.) L. *42
81a. *Swietenia mahogani* Jacq.	81a. *Swietenia mahogoni* (L.) Jacq.	81a. *Swietenia mahogoni* (L.) Jacq.
b. *Phoradendron rubrum* (L.) Griseb.	b. *Phoradendron rubrum* (L.) Griseb.	b. *Phoradendron rubrum* (L.) Griseb.
82. *Anisostichus capreolata* (L.) Bur.	82. *Bignonia capreolata* L.	82. *Bignonia capreolata* L. *43
83. *Ptelea trifoliata* L.	83. *Ptelea trifoliata* L.	83. *Ptelea trifoliata* L.
84a. *Philadelphus inodorus* L.	84a. *Philadelphus inodorus* L.	84a. *Philadelphus inodorus* L.
b. *Smilax lanceolata* L.	b. *Smilax lanceolata* L.	b. *Smilax smallii* Morong *44
85. *Asimina triloba* (L.) Dunal	85. *Asimina triloba* (L.) Dunal	85. *Asimina triloba* (L.) Dunal
86. *Annona reticulata* L.	86. *Annona reticulata* L.	86. *Annona reticulata* L.
87a. *Sloanea emarginata* L.	87a. *Manilkara bahamensis* Lam & Meeuse	87a. *Manilkara bahamensis* Lam & Meeuse *45
b._____	b. *Ipomoea microdactyla* Griseb.	b. *Ipomoea microdactyla* Griseb.
88l. *Epidendrum plicatum* Lindl.	88l. *Epidendrum plicatum* Lindley	88l. *Encyclia plicata* (Lindl.) Britt. & Millsp. *46
r. *Epidendrum cochleatum* L.	r. *Epidendrum cochleatum* L.	r. *Encyclia cochleata* (L.) Lemee
89. *Tillandsia fasciculata* Sw.	89. *Tillandsia balbisiana* (Schultes) Roemer & Schultes	89. *Tillandsia balbisiana* Schultes f. *47
90. *Thespesia populnea* (L.) Soland.	90. *Hibiscus tiliaceus* L.	90. *Hibiscus tiliaceus* L. *48
91a. *Cordia sebestena* L.	91a. *Cordia sebestena* L.	91a. *Cordia sebestena* L.
b. *Ipomoea carolina* L.	b. *Ipomoea carolina* L.	b. *Ipomoea carolina* L.
92. *Plumeria rubra* L.	92. *Plumeria rubra* L.	92. *Plumeria rubra* L.
93a. *Plumeria obtusa* L.	93a. *Plumeria obtusa* L.	93a. *Plumeria obtusa* L.
b. *Passiflora cupraea* L.	b. *Passiflora cupraea* L.	b. *Passiflora cuprea* L.
94. *Coccoloba diversifolia* Jacq.	94. *Coccoloba diversifolia* Jacq.	94. *Coccoloba diversifolia* Jacq.
95a. *Hippomane mancinella* L.	95a. *Hippomane mancinella* L.	95a. *Hippomane mancinella* L.
b. *Dendropenon purpureus* (L.) Krug & Urban	b. *Dendropenon purpureum* (L.) Krug & Urban	b. *Dendropenon purpureum* (L.) Krug & Urban
96. *Coccoloba uvifera* (L.) Jacq.	96. *Coccoloba uvifera* (L.) L.	96. *Coccoloba uvifera* (L.) L.
97. *Pithecellobium mucronatum* Britt.	97. *Pithecellobium bahamense* Northrop	97. *Pithecellobium bahamense* Northrop *49
98. *Kalmia latifolia* L.	98. *Kalmia latifolia* L.	98. *Kalmia latifolia* L.
99. *Clusia rosea* Jacq.	99. *Clusia rosea* Jacq.	99. *Clusia rosea* Jacq.

(Identification of Catesby's plates continued)

100. *Catesbaea spinosa* L.	100. *Catesbaea spinosa* L.	100. *Catesbaea spinosa* L.
Appendix	Appendix	Appendix
1. *Dodecatheon meadia* L.	1. *Dodecatheon meadia* L.	1. *Dodecatheon media* L.
2. *Hamamelis virginiana* L.	2. *Hamamelis virginiana* L.	2. *Hamamelis virginiana* L.
3. *Cypripedium acaule* L.	3. *Cypripedium acaule* Ait.	3. *Cypripedium acaule* Ait. *50
4. *Rhus glabra* L.	4. *Rhus glabra* L.	4. *Rhus glabra* L.
5. *Pancratium carolinianum* L.	5. *Hymenocallis carolinitana* (L.) Herbert	5. *Hymenocallis caroliniana* (L.) Herbert *51
6. *Theobroma cacao* L.	6. *Theobroma cacao* L.	6. *Theobroma cacao* L.
7. *Vanilla planifolia* Andr.	7. *Vanilla mexicana* Miller	7. *Vanilla planifolia* Andr. *52
8. *Lilium philadelphicum* L.	8. *Lilium philadelphicum* L.	8. *Lilium philadelphicum* L.
9. *Anacardium occidentale* L.	9. *Anacardium occidentale* L.	9. *Anacardium occidentale* L.
11. *Lilium canadense* L.	11. *Lilium canadense* L.	11. *Lilium canadense* L.
12. *Zephyranthes atamasco* (L.) Herbert	12. *Zephyranthes atamasco* (L.) Herbert	12. *Zephyranthes atamasco* (L.) Herbert
13. *Stewartia malacodendron* L.	13. *Stewartia malacodendron* L.	13. *Stewartia malacodendron* L.
15. *Magnolia acuminata* (L.) L.	15. *Magnolia acuminata* (L.) L.	15. *Magnolia acuminata* (L.) L.
16. *Panax quinquefolium* L.	16. *Panax quinquefolius* L.	16. *Panax quinquefolius* L. *53
171. *Kalmia augustifolia* L.	171. *Kalmia angustifolia* L.	171. *Kalmia angustifolia* L.
r. *Rhododendron maximum* L.	r. *Rhododendron maximum* L.	r. *Rhododendron maximum* L.
18. *Ficus brevifolia* Nutt.	18. *Ficus citrifolia* Miller	18. *Ficus citrifolia* P. Mill. *54
20. *Robinia hispida* L.	20. *Robinia hispida* L.	20. *Robinia hispida* L.

1) Johnston (1971), the most recent monographer of *Colubrina* (Rhamnaceae), included *Colubrina reclinata* (L'Hér.) Brongn. in the synonymy of *Colubrina elliptica* (Sw.) Brizicky & Stern.

2) Although Catesby's illustration is certainly not detailed enough alone to permit one to distinguish species of *Myrica*, geographic distribution is of considerable assistance. It has been identified as *Myrica pensylvanica* Loisel. by Ewan and also by Howard and Staples. However, I believe it to be *Myrica heterophylla* Raf. as *Myrica pensylvanica* occurs no further south than northeastern North Carolina while *Myrica heterophylla* is common in the coastal plain from northern Florida inro southern New England including of course coastal South Carolina, the site of Catesby's most intensive work. Linnaeus (1753, p. 1024) cited this Catesby plate as the only element of the β [var.] of *Myrica cerifera*.

3) The two eastern chestnut oaks were not distinguished from each other by Linnaeus or by other botanists. Early in the nineteenth century Willdenow (1805, 4:440.) proposed *Q. montana* as the name for the mountain chestnut oak before Nuttall's publication (1818, 2:215) of *Q. michauxii* for the swamp chestnut oak. Both species were previously included under the binomial *Q. prinus* L. Hardin (1979) recommended that botanists discontinue using the binomial *Q. prinus* L. since the material in the Linnaean herbarium cannot be determined with certainty and the Linnaean binomial has been applied almost equally to either species. However most authors in recent decades have applied *Quercus prinus* L. to the mountain or rock chestnut oak (= *Q. montana* Willd.) and *Quercus michauxii* to the swamp chestnut oak. Linnaeus included a reference to Catesby's account and plate in the synonymy of *Quercus prinus* but it is to be remembered that he included both species of chestnut oak under *Q. prinus*. *Catesby's treatment was clearly that of the*

swamp chestnut oak, Quercus michauxii Nutt., as his statements as to habitat and morphology indicate. Hardin's suggested solution seems tempting since we have no way of knowing what is meant when *Q. prinus* is used alone in the literature without synonyms or common names or the mention of the other chestnut oak that had been originally confused with it.

4) Ewan did not make note of the inadequate rendition of the oak depicted on the right side of Catesby's plate 1:*t.21* and I find both the illustration and brief description unidentifiable. Linnaeus (1753, p. 996) cited Catesby's account of this taxon as a synonym of *Q. rubra* [var.] β. Howard and Staples indicate it to be *Quercus rubra* L. which would be difficult to prove — or disprove from Catesby's publication. Linnaeus included within his concept of *Quercus rubra* L., comprising both the typical element and the β variant, the very distinctive southern red or Spanish oak (*Q. falcata*), the turkey oak, (*Q. laevis*.) as well as the red (or northern red) oak (*Q. rubra*). After a most rancorous series of papers dealing with the lectotypification of *Q. rubra*, extending through much of the first half of the century we hopefully have settled the application of the name.

5) Ewan (1974, p. 92) no doubt carelessly identified this Catesbian account as *Quercus laevis* Walt., the turkey oak with pinnately lobed leaves. Linnaeus (1753, p. 994) based his *Quercus phellos* [var.] γ solely upon this citation of Catesby. The plate and description given by Catesby both confirm that Howard and Staples were correct in identifying the plant as the blue jack oak, *Quercus incana* Bartr. (=*Q. cinerea* Michx.), with its unlobed leaves.

6) Although Catesby's plate and account was included by Linnaeus in the synonymy of *Quercus rubra*, it should be remembered that Linnaeus included under that binomial several of the eastern species of North American red oaks: *Quercus falcata* Michx., *Q. laevis* Walt. and *Q. rubra s.s.* Catesby surely was dealing with the turkey oak, *Q. laevis*, as noted by Howard and Staples and not with the northern red oak, *Q. rubra*, as suggested by Ewan.

7) Catesby, like Linnaeus and most eighteenth century biologists, did not distinguish between *Prunus virginiana* L. and *Prunus serotina* Ehrh. The description and plate do not provide the necessary details to enable us to distinguish what Catesby had. The scanty description with its indication of potential large size and indication of abundance in the thick woods of Carolina make it certain that the plant Catesby knew from field experience was *Prunus serotina* Ehrh. *Prunus virginiana* is unknown in South Carolina and very rare in the mountains of North Carolina and unknown elsewhere in that state.

8) The generic name *Bursera* Jacq. ex L. (1762) is conserved over *Elaphrium* Jacq. (1760).

9) Like Howard and Staples, I do not find that Catesby's plate of what appears to be an *Hypoxis* can be identified to species. The description with its mentioned five perianth segments and 5 stamens instead of 6 is most unusual. Detailed information needed to make specific determinations is lacking.

10) I agree with Rouleau (1946, 106) and with Howard and Staples (1983, p. 536) that Catesby illustrated the common coastal plain, swamp poplar of the Carolinas, *Populus heterophylla* L., and neither *P. deltoides* L. with its strongly flattened petioles nor *P. balsamifera* with which it has been synonymized in the past.

11) Constant juggling with the provisions of the International Code of Botanical Nomenclature would seem to be a perfect prescription for instability in nomenclature. For over

four decades we have enjoyed relative stability in the scientific names of two of our commonest hickories but this stability seems threatened due to nomenclatural tinkering. *Carya alba* (L.) K. Koch had been abandoned at least since the mid-1940s as an ambiguous name (see Rehder, 1945) since it was sometimes applied to the mockernut hickory (*Carya tomentosa* (Poir.) K. Koch) and sometimes to the shagbark hickory (*Carya ovata* (Mill.) K. Koch) as Linnaeus had included both in his *Juglans alba*. Originally no type was designated for *Juglans alba*, and hence it would appear Article 69 in its 1978 version of the ICBN could not be applied. The current form of Art. 69 permitting the abandonment of names used in two or more senses not including the type hardly applies when no type was designated and the original concept proves to have been a mixture. Earlier versions of Article 69 rejected a name "if it is used in different senses and so has become a long-persistent source of error." Howard & Staples argued that *Juglans alba* L. was typified by Crantz (1766, 1:157) since Crantz cited only Catesby in his brief account of *Juglans alba*.

This three-line account by Crantz consisted of the following:

2. IVGLANS *alba*.
IUGLANS foliis septenis lanceolatis serratis,
impari sessili. CATESB. *car.* 1. T. 38.

It would not seem that such action constitutes typification unless the author makes it clear that he intends to remove dissident elements from the protologue. No evidence exists that Crantz was doing more than citing that element mentioned in the protologue seen by him. Therefore, *Carya tomentosa* (Poir.) Nutt. is the correct binomial for the mockernut hickory. Just as is the case for *Quercus prinus* L. as suggested by Hardin, the best solution might well be to abandon *Carya alba* as a name used so often in such different senses that it would be better to exclude it from scientific use. This was proposed by Rehder (1945). Dr. James Luteyn of the New York Botanical Garden most kindly provided me with a copy of Crantz's treatment.

12) Ewan (1974, p. 93) reported Donald E. Stone's identification of the separate, single nut of Catesby's 1:*t.38* as *Carya cordiformis* (Wangenh.) K. Koch. Howard and Staples (1983, p. 528) repeated this determination without comment. In a genus as notoriously variable as is *Carya*, one surely must hesitate to determine the identity of a species based on a single nut especially when the artist is as careless as Catesby repeatedly demonstrated he was. Probably overly influenced by the most usual application of the common name, I had thought the sketch of the fruit and description referred to *Carya glabra* (P. Mill.) Sweet. Since the apparently nearly globose fruit lacked a ridged husk, the identification seemed at least possibly correct. Sargent state (1895, 7:167) that the "earliest authentic account of *Hicoria glabra*, with an excellent figure of the nut, appeared in Catesby's *Natural History of Carolina* . . ." However it would be unwise to make much of a wager on the identity of a great many of Catesby's plates especially on one in which only a single fruit is illustrated.

13) I agree with Eyde (1959 and 1964) and Howard and Staples (1983, p. 533) that Catesby's plate and description (1:*t.41*) is *Nyssa sylvatica* Marsh. and not *Nyssa aquatica* L. as identified by Ewan.

14) The fruits of this species were illustrated and described by Catesby as "red of an oval form" which agrees with *Smilax pumila* Walt. and is in conflict with the black, globose berries of *S. herbacea* L. with which Ewan (1974, p. 93) identified it. Catesby (1:*t.47*)

stated that each berry has "a very hard pointed seed" which is true of *S pumila* Walt. (see Coker, 1944, p. 60), while the berry of *S herbacea* L. has "3 – 6 brownish seeds" according to Mangaly (1968, p. 250).

15) Although Linnaeus cited to Catesby 1: *t.50* in the protologue of *Trillium sessile* L., Freeman (1975) demonstrated that the Linnaean species in the modern restricted sense does not occur in coastal South Carolina and is represented there instead by *Trillium maculatum* Raf.

16) The fruits of *Menispermum canadense* are black while those of *Cocculus carolinus* are red. Catesby's description and plate are of red fruit and Catesby's 1:*t.51* illustrates *Cocculus*.

17) The identity of Catesby's plate is both crucial to nomenclatural stability and highly controversial. Fernald (1944, p. 38) stated that there "can be no question that the type of *S. tamnoides* L. was the Catesby plate." Fernald concluded that Catesby's plant was a perennial, woody, terete-stemmed vine. Howard and Staples (1983, p. 517), although accepting Fernald's identification of Catesby's plate, indicated that "a specimen obtained by Kalm (LINN 1132. 10) is preferable as lectotype" of *S. tamnoides*. Fernald had excluded Kalm's specimen from *S. tamnoides* as it was "a specimen of the herbaceous *S. Pseudo-China*." Clausen (1951, p. 109) reached a very different conclusion as to the identity of Catesby's plate and hence of the identity of *Smilax tamnoides* L. Clausen agreed that "Catesby's description and illustration are all important in the typification of *S. tamnoides* " but concluded with, I feel, convincing evidence that "Catesby's illustration and description were prepared from diverse materials" and "probably no species exists with the combination of characteristics as depicted." Evidence was presented that two and more probably three species entered into Catesby's description and illustration. Clausen concluded, since it was impossible to make a definite identification of what Catesby had, that the Linnaean name should be disregarded as "ambiguous." It would seem to me impossible to identify Catesby's plate and, as the specimen of the herbaceous element also included in the Linnaean protologue of *S. tamnoides* is of a herbaceous species and identifiable with *S. pseudo-china* L., it would seem for the present at least the woody species had best be known as *Smilax hispida* Muhl. ex Torr.

18) There is an obvious discrepancy in the authority of the combination of the binomial *Gelsemium sempervirens* (= *Bignonia sempervirens* L.) The combination is usually attributed to W.T. Aiton or Ait.f. (1811) and not to his father, W. Aiton (1789). Jaume Saint-Hilaire (1805) apparently first made the combination *Gelsemium sempervirens*.

19) Eyde (1959, p. 212 and 1964, p. 130) stated that Catesby's 1: *t.61* and the accompanying description are of *Nyssa aquatica* L. The plate and description support this decision and argue against Ewan's identification of it as *Nyssa ogeche* Bartr. ex Marsh.

20) The general confusion and misuse of the names applied to *Halesia* Ellis ex L. has been exhaustively dealt with by Reveal and Seldin (1976) and their clarifying conclusions are reflected by Howard and Staples (1983) and by me.

21) Fernald (1946, p. 390) pointed out that, although cited by Linnaeus in the protologue of *Fraxinus americana* L., Catesby's plate and description clearly apply to the "southern Water-Ash which we call *F. caroliniana* P. Mill."

22) Catesby's plate (1: *t.83*) and description clearly is that of the green spathed, greenish berried *Peltandra virginica* (L.) Schott & Endl. and not the white spathed, red berried *P. sagittifolia* (Michx.) Morong.

23) As demonstrated by Compère (1963) among others, the correct name for the Afro-American Black Mangrove is *Avicennia germinans* (L.) L. and not *Avicennia nitida* Jacq.

24) In spite of the depiction of alternate leaves in 1:*t.86*. by Catesby, the plate surely is a crude representation of *Laguncularia*.

25) The generic name *Dalbergia* L.f. (1782) is conserved over the earlier *Ecastaphyllum* P. Br. (1756).

26) The genus *Xylophylla* L. was segregated from *Phyllanthus* L. based upon an erroneous description of the flower as pointed out by Webster (1956, 37:94). The segregate genus *Xylophylla* L. has been maintained by very few authors in recent decades.

27) Catesby's 2:*t.30* seems to be a badly garbled account and depiction of a most improbable mixture. One can hardly trust the description as it seemingly has internally contradictory statements *e.g.* the description of the fruit. Since it is said to be a shrub up to twelve feet high, Ewan's suggestion that it is *Samolus ebracteatus* HBK. can be ruled out as a possibility. The flowers possibly suggest something in the Lauraceae like *Litsea aestivalis* (L.) Fern. but the capsular fruit seems more suggestive of some member of the Andromedae like *Lyonia* or *Leucothoë*. This plate continues to resist all attempts at its identification.

28) Correll and Correll (1982, p. 410) place *Picrodendron macrocarpum* (A. Rich.) Britt. in the synonymy of *P. baccatum*. C.D. Adams (1972, p. 216) is more uncertain for under *P. baccatum* he states "Probably endemic," but *P. macrocarpum* (A. Rich.) Britt., occurring in Bahamas, Cuba, Hispaniola and Grand Cayman is suggested as probably not really distinct. As might be expected others take an intermediate position treating the element occurring in the Bahamas as *Picrodendron baccatum* var. *bahamense* Krug & Urb.

29) Both Ewan and Britton and Millspaugh (1920, p. 162) identify Catesby's 2: *t.2* as *Leucaena glauca* sensu authors which has been shown by de Wit (1961) to be *Leucaena leucocephala* (Lam.) de Wit. Catesby's treatment describes a plant "very high" with "large straight trunks some being three feet in diameter" and "large spreading limbs." The pod was described as "an inch broad and almost five long." The wood is said to be the best the Bahamas afford and of the quality to be shipped to England. All of these features exclude *Leucaena*. The plant represented is probably *Lysiloma latisiliquum* (L.) Benth.

30) The basionym of *Banara minutiflora* (A. Rich.) Sleumer (=*Ilex minutiflora* A. Rich., 1845) has priority over *Banara reticulata* Griseb. (1860).

31) The diagnostic details needed to distinguish between *Xanthosoma* and *Alocasia* are not made evident in Catesby's generalized plate. *Calocasia* can be ruled out as it has peltate leaves.

32) Although Linnaeus recognized three species of *Passiflora* in what is today treated as one variable species, uncertainty exists as to which is the correct name. Dr. John McDougal (MO), an authority on the meso-American Passifloraceae, has looked into the problem and to date has not found any author earlier than Master (1872) who has unequivocally placed one name in the synonymy of the other. Master treated *P. pallida* L. as a variety of *P. suberosa* L. which would establish *P. suberosa* as the name to be maintained if the taxa were combined. MacDougal found that Robert Combs (1897, p. 424) appears to be the first author who unequivocally reduced one species to the synonymy of the other and he also chose to retain *Passiflora suberosa* L. This choice of binomials should settle the matter at least until someone finds an earlier publication that unequivocally made another choice.

33) Like Howard and Staples (1983, p. 540 – 542) I am unable to accept Ewan's determination that the plant was *Decumaria barbara* L. The "certain discrepancies of habit, flower color, and corolla shape are just too numerous to accept such an identification." Like them I am unable to suggest an acceptable candidate for the name. *Decumaria* is a woody vine with opposite leaves which are much more ovate than the alternate, elliptical leaves of Catesby's plate and description. The inflorescence of *Decumaria* is a cymose corymb while that of Catesby's plate is basically racemous. Catesby states the fruit to be 2-parted; *Decumaria* is 7 – 10-loculate.

34) Although its basionym is the first name applied to the species, the combination *Polystachya minuta* (Aubl.) Britt. (1903) is a later homonym of *P. minuta* Rich. & Gal. (1845) and consequentially cannot be used.

35) The identity of 2:*t.*56 is somewhat controversial as the differences between *Lilium michauxii* Poir. and *L. superbum* L. are too subtle to be distinguished by either Catesby's artistic skills or his ability in phytography. Since only *L. superbum* grows in Pennsylvania (Wherry, Fogg and Wahl. 1979: p. 103) that part of Catesby's account can be assigned with confidence. The bulk of the plate, although not based on the Pennsylvania plant, I would also identify it as *L. superbum* since its leaves seem more elliptical than spatulate. If the majority of the plate was derived from South Carolina material as seems more probable, then Ewan's identification as *L. michauxii* Poir. seems more understandable since that species is widespread in South Carolina and *L. superbum* does not occur in South Carolina. However, the depicted leaves appear to fit *L. superbum* better than do those of *L. michauxii*.

36) Both Ewan (1974, p. 97) and Howard and Staples (1983, p. 515) identified Catesby's 2:*t.*62 as *Commelina virginica* L. but that Linnaean species has all blue petals while Catesby's description indicates "two blue petals . . . and one very small white petal . . ." Therefore it seems more probable that Catesby had *Commelina erecta* L. whose flowers would at least match this description of the petal colors.

37) Ewan identified Catesby's 2:*t.*67 as *Annona cherimolia* P. Mill. but that species has three large outer petals and three minute, scale-like inner petals while Catesby's description calls for six sizable petals. *P. cherimola* is a montane species and is certainly not to be expected in the Bahamas and was not reported from those islands by either Britton and Millspaugh (1920) or by the Corrells (1982). Catesby's plate is almost certainly *Annona glabra* L.

38) Identification of the plants in this plate is difficult and the three interpretations of it reflect our collective uncertainties. The plate is not carefully delineated and the colors are particularly unsatisfactory. Elliott (1824, 2:11) cites Catesby's plate as part of the protologue of his *Sarracenia cateshaei* and Howard and Staples disposition of 2:*t.*69 reflects this interpretation. The only suggestion of Catesby's plate being *Sarracenia cateshaei* is that the venation of the flap-like hood is said to be purple. Elliott's type of *S. cateshaei* is usually judged to be a hybrid between *S. flava* and *S. purpurea* and this is reflected in that the petals of the hybrid, instead of being clear yellow as they are in *S. flava* or dark maroon as they are in *S. purpurea* are said by Bell (1952, p. 61) to be maroon externally and red-yellow internally. Catesby's plate is no match for that description but it is equally a poor match for *S. flava* as its petals are depicted (at least in the copy I have seen) as a sickly greenish yellow. In spite of what is said above I feel that there is nothing in Catesby's account or plate (the right-hand figures) that would exclude *S. flava* as the

most likely identification. The hood-like or cowl-topped leaf shown on the left side of the plate is in my opinion a crude effort to picture the distinctive leaf of *S. minor* Walt.

39) The difficulty in attempting to identify many of Catesby's plates is demonstrated by Catesby's rendition (2:*t.72*) of this lady's-slipper. The illustration is, like a large number in the two volumes, more of a crude caricature than a reasonable rendition of the botanical features upon which identification must rest. Ewan (1972, p. 94) identified the poor picture as *C. calceolus*, the yellow lady's-slipper, and Howard and Staples (1983, p. 516) and Wilbur have identified it as *C. acaule*. The deeply fissured lip and the hint of red in the lip are about all there is to defend the latter choice. Illustrations indeed must border on being wretched if one has difficulty in distinguishing between two such dissimilar species.

40) The differences in our three identifications of Catesby's 2: *t.74* merely reflect the three different commentators accepting different standards in the rapidly changing generic dismemberment in such large orchid genera as the broadly conceived *Epidendrum*.

41) All are agreed as to the identity of Catesby's 2: *t.75* but reflect the well-founded dismemberment of such broadly conceived genera as *Sideroxylon* L., now restricted to the Old World, by accepting the genus *Mastichodendron* Lam. as the American segregate.

42) Catesby's description and plate are again not easy to reconcile with what exists in nature. The tapering leaf bases are clearly those of *Magnolia tripetala* as no doubt impressed Linnaeus when he cited Catesby's 2: *t.80* in synonymy of *Magnolia virginiana* [var.] *tripetala*. This is in considerable conflict with the somewhat cordate or auriculate leaf base of *M. macrophylla*. No indication is evident on the plate or in the description that the leaves are other than green beneath while the lower surface of the leaves of *M. macrophylla* are strikingly white-glaucous. Catesby stated that the leaves of this species of *Magnolia* "are usually thirty inches in length" which greatly influenced Ewan in his identification of Catesby's plate as *M. macrophylla* which has leaves reportedly up to 10 dm long. The leaves of *M. macrophylla* according to Fernald (1950, p. 676) are 3 – 9 dm long while Radford, Ahles & Bell (1968, p. 476) state them to be up to one meter long. Comparable figures stated by these last authors for *Magnolia tripetala* are 3 – 6 dm long and 1 – 4.5 dm long. In spite of the striking lack of agreement in leaf length by these authors, it would seem that Catesby's stated size of the leaves better fits *M. macrophylla*. The lack of detail in both illustration and description as to the pubescence on young twigs, buds and follicles prevents using these prime distinguishing features to separate the two species. On balance it seems to me that it is most likely that Catesby's 2:*t.80* represents *Magnolia tripetala*.

43) The discrepancy in the comparative table between Ewan and the other two commentaries on the identity of the plant shown in 2:*t.82* is more apparent than real. There has been much discussion on the type of the Linnaean genus *Bignonia* over at least the past century and these differences have only recently been resolved by fiat of the International Botanical Congress. Something of the background can be gleaned from papers by Gentry (1972) and by Wilbur (1980). The result is that the International Code of Botanical Nomenclature (1988, p. 265) has listed *Bignonia* L. as conserved with *Bignonia capreolata* L. as its type. Consequently the current correct name is *Bignonia capreolata* L.

44) Fernald (1944b) carefully analyzed the confused tangle into which this greenbrier had grown in the past two centuries and concluded that *Smilax lanceolata* L. was based upon

Virginian material and was nothing more than "the narrowest-leaved *S. laurifolia*" with the expected black fruit. Catesby's 2: *t.84* is described as a non-spinous plant with red or even scarlet berries. Catesby's plant is *Smilax smallii* Morong which in Fernald day was unknown north of northern coastal North Carolina but is included in the recent Atlas of the Virginia Flora (see Harvill *et al.* 1986, p. 25). In decyphering the tangled history of *Smilax laurifolia* but applying equally well to the history of a great many of the species discussed in these notes, Fernald (1944b) made the following perceptive observation: "One sometimes doubts the wisdom of starting our nomenclature of American plants with Linnaeus (1753). It is almost an exceptional North American species about which he was not hopelessly confused."

45) Although *Sloanea emarginata* L. is the first binomial given to this species, the generic name is typified by a member of the Elaeocarpaceae and *S. emarginata* is a species of *Manilkara* (Sapotaceae). The Linnaean binomial cannot be transferred to *Manilkara* as there is an earlier Hawaiian species named *Manilkara emarginata* Lam (1925). Correll and Correll (1982, p. 1099), Long & Lakela (1971, p. 681) and Little (1979, p. 170) all treat this species as *Manilkara bahamense* (Baker) Lam & Meeuse. Cronquist (1945 and 1946) considers it to be but one of four subspecies which together comprise *Manilkara jaimiqui* (Wright) Dubard. The south Bahaman and Cuban representative was treated as *Manilkara jaimiqui* ssp. *emarginata* (L.) Cronq.

46) The recent tendency among orchidologists has been to segregate distinctive groups of species from the formerly all-inclusive genus *Epidendrum* L. One of the most distinctive groups of approximately 150 species has been segregated as *Encyclia* Hook. and is characterized by its column being either free from the lip or at most partially adnate to it while in *Epidendrum* the column is completely adnate to the lip (see Dressler 1961).

47) Smith (1938, p. 136 and 1977, p. 985) cites Catesby's account and plate as illustrating *Tillandsia balbisiana* while Britton and Millspaugh (1920, p. 65) identify Catesby's account with *T. fasciculata* Sw. I take the unscientific expedient of casting my vote with the more eminent authority on the Bromeliaceae. The differences between the two species strike me as too subtle to be discernible from either Catesby's vague plate or description.

48) Linnaeus (1753, p. 694) cited Catesby 2:*t.90* with the treatment of *Hibiscus populneus* L. Catesby's description and plate both indicate the pronounced calycine teeth of *Hibiscus tiliaceus* which contrast greatly with the truncate calyx of *Thespesta* with which Ewan (1976, p. 99) equated it following Linnaeus. Britton and Millspaugh (1920, p. 273) correctly cited Catesby 2: *t.90* with *Parti tiliaceum* (L.) St. Hil., a synonym of *Hibiscus tiliaceus* L.

49) The difference between the three commentaries concerning *Pithecellobium* are of little consequence. Correll and Correll's observation (1982, p. 678) has convinced them that the alleged differences between *P. mucronatum* Britt. ex Coker and *P. bahamense* Northrop are of no taxonomic significance.

50) Although we are all agreed that Catesby's *t.9* of the Appendix must be *Cypripedium acaule* Ait., it should be pointed out that this plate well demonstrates the crudeness of many of Catesby's illustrations. The two leaves supposedly nearly basal in this species are illustrated as being borne about the midpoint of the stem and separated from each other by more than an inch of stem. It is by elimination that one determines the identity of many of Catesby's plates rather than by the faithfulness of the illustration.

51) Again we are all agreed that this must be *Hymenocallis caroliniana* (L.) Herb. or its basionym, but there is considerable question as to just what the name applies. Any hope to resolve this uncertainty must await a badly needed revision of the genus.

52) Until the much-needed revision of the genus *Vanilla* is undertaken and completed, one can scarcely be dogmatic as to the identity of Catesby's plate or for that matter even of the name of most widely cultivated species of the genus. The protologues of the earliest named species seem often to be mixtures and it seems impossible to straighten out the confusion until a modern revision is completed. Fawcett and Rendle (1963, a rearrangement of the 1910 edition, p. 118) indicated "that some of the old drawings suggest *V. inodora* rather than *V. pompona* or *V. planifolia*, *e.g.* Catesby's plate (Nat. Hist. Carol., App. t.7) which is quoted by Miller as his *V. mexicana*."

53) In spite of the fact that Linnaeus treated the genus *Panax* as neuter, the genus is masculine in accordance with it classical treatment (see Flora N. America 28B: 9. 1944).

54) General agreement exists that *Ficus brevifolia* Nutt. (1846) is a synonym of *Ficus citrifolia* P. Mill. (1768). A sampling of recent authors treating the two binomials in this manner include Correll and Correll (1982, p. 419), Little (1979, p. 131), DeWolf (1960, p. 146) and Howard (1988, p. 60).

APPENDIX: TAXA SYSTEMATICALLY ARRANGED

GYMNOSPERMS

Taxodiaceae

Taxodium distichum (L.) L. C. Rich. (1: *t.11*)

ANGIOSPERMS

MONOCOTS

Amaryllidaceae (see Liliaceae)

Araceae

Orontium aquaticum L. (1: *t.82*) Peltandra virginica (L.) Schott & Endl. (1: *t.83*) Symphoricarpus foetidus (L.) Nutt. (2: *t.71*) ?Alocasia or Xanthosoma (2: *t.45*)

Bromeliaceae

Catopsis berteroniana (J.A. & J.H. Schultes) Mez (2: *t.77*) Tillandsia balbisiana Schult. f. (2: *t.89*)

Commelinaceae

Commelina erecta L. (2: *t.62*)

Gramineae

Oryza sativa L. (1: *t.14*)Uniola paniculata L. (1: *t.32*)

Hydrocharitaceae

Thalassia testudinum König (2: *t.38*)

Liliaceae

Hymenocallis caroliniana (L.) Herb. (2 App.: *t.5*)
Hypoxis sp. (1: *t.33*)
Lilium canadense L. (2 App.: *t.11*)
Lilium catesbaei Walt. (2: *t.58*)
Lilium philadelphicum L. (2 App: *t.8*)
Lilium superbum L. (2: *t.56*)
Trillium catesbaei Ell. (1: *t.45*)
Trillium maculatum Raf. (1: *t.50*)
Zephyranthes atamasco (L) Herb. (2 App.: *t.12*)

Orchidaceae

Cleistes divaricata (L.) Ames (1 *t.58* above)
Cypripedium acaule Ait. (2: *t.72* and 2 App.: *t.3*)
Cypripedium pubescens Willd. (2: *t.73*)
(= *C. calceolus* var. *pubescens* (Willd.) Correll)
Encyclia boothianum (Lindl.) Dressler (2: *t.74*)
Encyclia cochleata (L.) Lemee (2: *t.88* right)
Encyclia plicata (Lindl.) Britt. & Millsp. (2: *t.88* left)
Epidendrum nocturnum Jacq. (2: *t.68*)

Polystachya concreta (Jacq.) Garay & Sweet. (2: *t.55*)
Vanilla planifolia Andr. (2 App.: *t.7*)

SMILACACEAE

Smilax lanceolata L. (2: *t.84* below)
Smilax laurifolia L. (1: *t.15*)
Smilax pumila Walt. (1: *t.47*)
Smilax spp. (a hopeless mixture) (1: *t.52*)

DICOTS

ACERACEAE

Acer rubrum L. (1: *t.62*)

ANACARDIACEAE

Anacardium occidentale L. (2 App.: *t.9*)
Metopium toxiferum (L.) Krug & Urb. (1: *t.40*)
Rhus glabra L. (2 App.: *t.4*)

ANNONACEAE

Annona glabra L. (2 *t.64* and 2 *t.67*)
Annona reticulata L. (2: *t.86*)
Asimina triloba (L.) Dunal (2: *t.85*)

APOCYNACEAE

Echites umbellata Jacq. (1: *t.58* below)
Plumeria obtusa L. (2: *t.93*) above)
Plumeria rubra L. (2: *t.92*)
Urechites lutea (L.) Britt. (2: *t.53*)

AQUIFOLIACEAE

Ilex cassine L. (1: *t.31*)
Ilex vomitoria Ait. (2: *t.57*)

ARALIACEAE

Panax quinquefolius L. (2 App.: *t.16*)

ARISTOLOCHIACEAE

Aristolochia serpentaria L. (1: *t.29*)

BERBERIDACEAE

Podophyllum peltatum L. (1: *t.24*)

BIGNONIACEAE

Bignonia capreolata L. (2: *t.82*)
Campsis radicans (L.) Seem. (1: *t.65*)
Catalpa bignonioides Walt. (1: *t.49*)
Jacaranda caerulea (L.) Griseb. (1: *t. 42*)
Tabebuia bahamensis (Northrop) Britt. (1: *t.37*)

BORAGINACEAE

Bourreria ovata Miers (2: *t.79*)
Cordia sebastena L. (2: *t.91* above)

BURSERACEAE

Bursera simaruba (L.) Sarg. (1: *t.30*)

CALYCANTHACEAE

Calycanthus floridus L. (1: *t.46*)

CANELLACEAE

Canella winterana (L.) Gaertn. (2: *t.50*)

CARYOPHYLLACEAE

Silene virginica L. (2: *t.54*)

CHRYSOBALANACEAE

Chrysobalanus icaco L. (1: *t.25*)

CLETHRACEAE

Clethra alnifolia L. (1: *t.66*)

COMBRETACEAE

Conocarpus erectus L. (2: *t.33* above)
Languncularia racemosa (L.) Gaertn. (1: *t.86*)

COMPOSITAE

Borrichia arborescens (L.) DC. (1: *t.93*)
Echinacea purpurea (L.) Moench (2: *t.59*)
Salmea petrobioides Griseb. (1: *t.72*)
Wedelia bahamensis (Britt.) O.E. Schulz (1: *t.92*)

CONVOLVULACEAE

Ipomoea batatas (L.) Lam. (2: *t.60*)
Ipomoea carolina L. (2: *t.91* below)
Ipomoea microdactyla Griseb. (2: *t.87* below)
Ipomoea sagittata Poir. (1: *t.35*)

CORNACEAE

Cornus florida L. (1: *t.27*)

EBENACEAE

Diospyros virginiana L. (2: *t.76*)

ERICACEAE (and see Monotropaceae)

Kalmia angustifolia L. (2 App.: *t.17* left)
Kalmia latifolia L. (2: *t.98*)
Leucothoë racemosa (L.) A. Gray (2: *t.43*)
Oxydendrum arboreum (L.) DC. (1: *t.71*)

Rhododendron maximum L. (2 App.: *t.17* right)
Rhododendron viscosum (L.) Torr. (1: *t.57*)

EUPHORBIACEAE

Croton eluteria (L.) Sw. (2: *t.46*)
Hippomane mancinella L. (2: *t.95* above)
Phyllanthus epiphyllanthus L. (2: *t.26*)
Picrodendron baccatum (L.) Krug & Urb. (2: *t.32*)

FAGACEAE

Castanea pumila (L.) P. Mill. (1: *t.9*)
Quercus alba L. (1: *t.21* left)
Quercus incana Bartr. (1: *t.22*)
Quercus laevis Walt. (1: *t.23*)
Quercus marilandica Muenchh. (1: *t.19*)
Quercus michauxii Nutt. (1: *t.18*)
Quercus nigra L. (1: *t.20* above)
Quercus phellos L. (1: *t.16*)
Quercus virginiana P. Mill. (1: *t.17*)
Quercus sp. (1: *t.21* right)

FLACOURTIACEAE

Banara minutiflora (A. Rich.) Sleumer (2: *t.42* right)

GENTIANACEAE

Gentiana catesbaei Walt. (1: *t.70*)

GOODENIACEAE

Scaevola plumieri (L.) Vahl (1: *t.79*)

GUTTIFERAE

Clusea rosea Jacq. (2: *t.99*)

HAMAMELIDACEAE

Hamamelis virginiana L. (2 App.: *t.2*)
Liquidambar styraciflua L. (2: *t.65*)

JUGLANDACEAE

Carya glabra (P. Mill.) Sweet (1: *t.38*)
Carya tomentosa (Poir.) Nutt. (1: *t.38*)
Juglans nigra L. (1: *t.67*)

LAURACEAE

Ocotea coriacea (Sw.) Britt. (2: *t.28* above)
Persea borbonia (L.) Sprengel (1: *t.63*)
Sassafras albidum (Nutt.) Nees (1: *t.55*)

LEGUMINOSAE

a) Mimosoideae

Acacia tortuosa (L.) Willd. (2: *t.44*)
Lysiloma latisiliquum (L.) Benth. (2: *t.42* left)
Pithecellobium bahamense Northrop (2: *t.97*)

b) Caesalpinoideae

Caesalpinia bahamensis Lam. (2: *t.51* above)
Gleditsia aquatica Marsh. (1: *t.43*)
Haematoxylon campechianum L. (2: *t.66*)

c) Papilionoideae

Dalbergia ecastophyllum (L.) Taub. (2: *t.24*)
Erythrina herbacea L. (2: *t.49*)
Galactia rudolphioides (Griseb.) Benth. & Hook. (2: t.28 below)
Robinia hispida L. (2 App.: *t.20*)

LOGANIACEAE

Gelsemium sempervirens (L.) J. St. Hil. (1: *t.53*)
Spigelia marilandica (L.) L. (2: *t.78*)

LORANTHACEAE (INCL. VISCACEAE)

Dendropemon purpureum (L.) Krug & Urban (2: *t.95* below)
Phoradendron rubrum (L.) Griseb. (2: *t.81* below)

MAGNOLIACEAE

Liriodendron tulipifera L. (1: *t.48*)
Magnolia acuminata (L.) L. (2 App.: *t.15*)
Magnolia grandiflora L. (2: *t.61*)
Magnolia tripetala (L.) L. (2: *t.80*)
Magnolia virginiana L. (1: *t.39*)

MALVACEAE

Hibiscus tiliaceus L. (2: *t.90*)
Phymosia abutiloides (L.) Desv. ex Ham. (1: *t.77*)

MELIACEAE

Swietenia mahagoni (L.) Jacq. (2: *t.81* above)

MENISPERMACEAE

Cocculus carolinus (L.) DC. (1: t.51)

MONOTROPACEAE

Monotropa uniflora L. (1: *t.36*)

MORACEAE

Ficus citrifolia P. Mill. (2 App: *t.18*)

MYRICACEAE

Myrica cerifera L. (1: *t.69*)
Myrica heterophylla Raf. (1: *t.13*)

NYSSACEAE

Nyssa aquatica L. (1: *t.60*)
Nyssa sylvatica Marsh. (1: *t.41*)

OLEACEAE

Chionanthus virginicus L. (1: *t.68*)
Fraxinus caroliniana P. Mill. (1: *t.80*)
Osmanthus americanus (L.) A. Gray (1: *t.61*)

PASSIFLORACEAE

Passiflora cuprtaea L. (2: *t.93* below)
Passiflora suberosa L. (2: *t.51* below)

PLATANACEAE

Platanus occidentalis L. (1: *t.56*)

POLYGONACEAE

Coccoloba diversifolia Jacq. (2: *t.94*)
Coccoloba uvifera (L.) L. (2: *t.96*)

PRIMULACEAE

Dodecatheon meadia L. (2 App.: *t.1*)

RHAMNACEAE

Colubrina elliptica (Sw.) Briz. & Stern (1: *t.10*)
Reynosia septentrionalis Urb. (1: *t.75*)

RHIZOPHORACEAE

Rhizophora mangle L. (2: *t.63*)

ROSACEAE

Prunus serotina Ehrh. (1: *t.28*)

RUBIACEAE

Casasia clusiifolia (Jacq.) Urb. (1: *t.59*)
Catesbaea spinosa L. (2: *t.100*)
Mitchella repens L. (1: *t.20* below)

RUTACEAE

Amyris elemifera L. (2: *t.33* below)
Ptelea trifolia L. (2: *t.83*)
Zanthoxylum clava-herculis L. (1: *t.26*)

SAPOTACEAE

Manilkara bahamensis Lam & Meeuse (2: *t.87* above)
Mastichodendron foetidissimum (Jacq.) Lam (2: *t.75*)

SARRACENIACEAE

Sarracenia flava L. (2: *t.69* right)
Sarracenia minor Walt. (2. *t.69* left)
Sarracenia purpurea L. (2: *t.70*)

SAXIFRAGACEAE (INCL. HYDRANGEACEAE)

Philadelphus inodorus L. (2: *t.84* above)

STERCULIACEAE

Theobroma cacao L. (2 App.: *t.6*)

STYRACACEAE

Halesia tetraptera Ellis (1: *t.64*)

SYMPLOCACEAE

Symplocus tinctoria (L.) L'Hér. (1: *t.54*)

THEACEAE

Gordonia lasianthus (L.) Ellis (1: *t.44*)
Stewartia malacodendron L. (2 App.: *t.13*)

THEOPHRASTACEAE

Jacquinia keyensis Mez (1: *t.98*)

VERBENACEAE

Avicennia germinans (L.) L. (1: *t.85*)
Callicarpa americana L. (2: *t.47*)

VITACEAE

Cissus tuberculata Jacq. (2: *t.48*)

UNDETERMINED PLATES

(2: *t.30*)
(2: *t.52*)

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